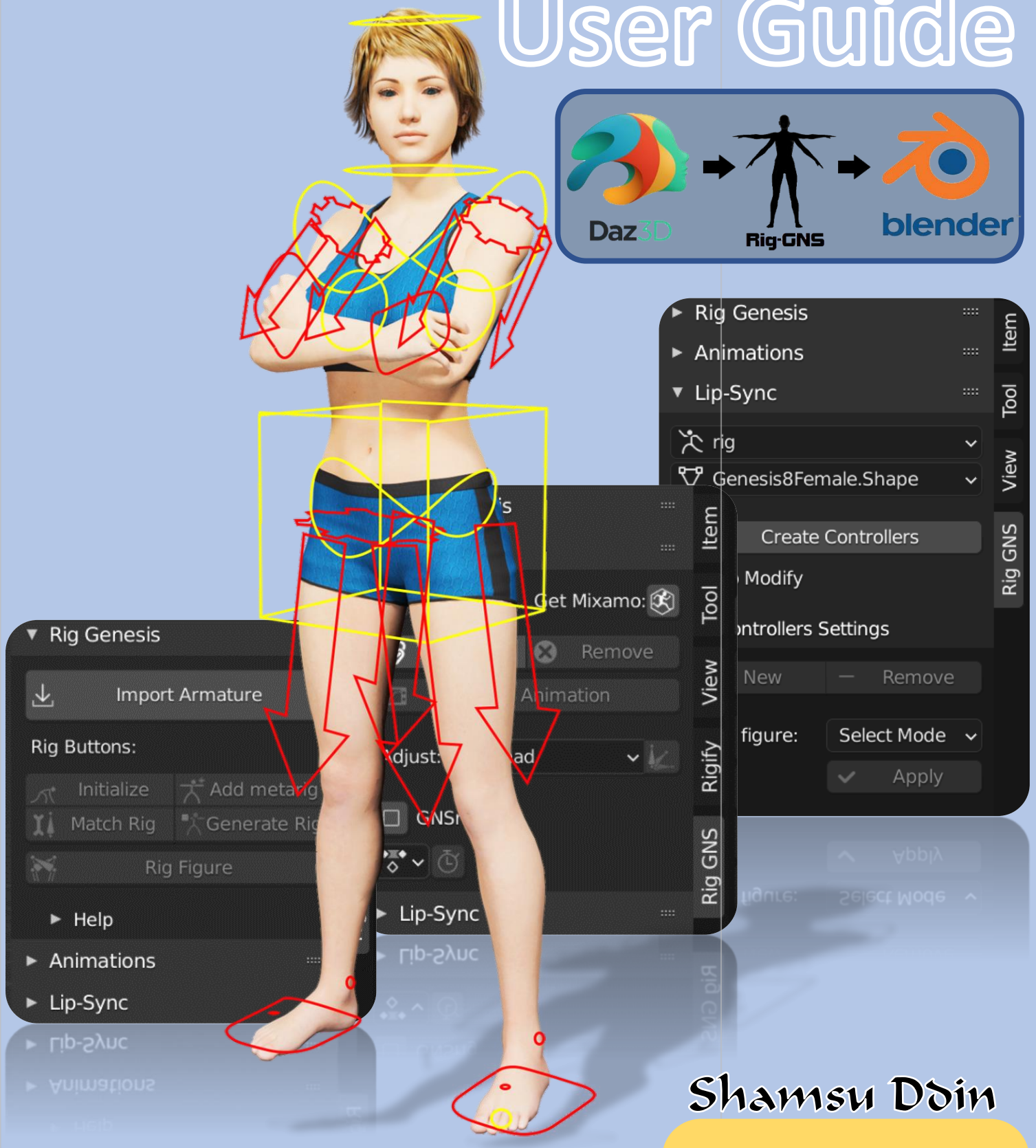
Rig-GNS 2.0 Blender Plug-in

User Guide



Shamsu Ddin

From 22722studios

A guide for Rig-GNS 2.0 Plug-in for blender.

Copyright: Shamsu Ddin, 2020/2021

Contact: 22722studios@gmail.com

Rig-GNS: https://gum.co/yFocf

Table of content

- Table of content - - - - - - - - 03
- Introduction - - - - - - - - 04
- Chapter One (Getting started with rig-GNS) - - - 05
    - 1.1 Exporting Genesis figure from Daz - - - 05
    - 1.2 Importing Genesis Figure in Blender - - - 07
    - 1.3 Start rigging process - - - - - 08
- Chapter Two (Animation with Rig-GNS) - - - - 09
    - 2.1 Getting Mixamo Animation - - - - 09
    - 2.2 Using Mixamo Animation - - - - 10
    - 2.3 Getting Daz Animation - - - - - 11
    - 2.4 Using Daz Animation - - - - - 11
- Chapter Three (Lip-sync with Rig-GNS) - - - - 13
    - 3.1 Creating lip-sync. - - - - - - 13
    - 3.2 Modifying Mouth-shapes - - - - 14
    - 3.3 Adding and removing controllers - - - 14
    - 3.4 Additional Functions - - - - - 15
- Appendix - - - - - - - - - 16

Introduction

Rig-GNS is a blender plugin for rigging and animating Genesis figure from Daz studios. It includes features for Copying animations from Mixamo as well as Daz animation Library. It also includes features for creating lip-sync and facial expressions.

Figuring new addon can sometimes be discouraging, which is why the Rig-GNS User-interface was created to make it as user-friendly as possible. The interface is divided into three main panels; the Rig-Genesis panel, the Animation panel, and the Lip-sync panel.

The Rig-Genesis panel contains buttons for importing and rigging the genesis figure with rigify. The animation panel assigns animations from Mixamo or Daz animation library to the figure. And the lip-sync aspect of the plug-in helps with the creation of lip-sync and expressions for the character. These various aspects of the add-on will be discussed in greater detail in later chapters of this Guide.

The plug-in was tested with Blender 2.8 as well as 2.9 (Including 2.91). The genesis figure used during testing were exported from Daz studio 4.15 and prior versions. All testing was done on Windows 10 OS.

Features:

1. Rig Genesis figures in few clicks.
2. Full control of all body parts.
3. Copy animation templates from Mixamo and Daz store.
4. Adjust animation for countless motion possibilities.
5. Additional Tertiary Face layer in Rigify panel for more facial control.
6. Auto mouth-shapes generation for Lip-sync.
7. Improved and simplified material shaders in both cycles and eevee.
8. Auto adjust timeline to match animation.
9. Friendlier user interface
10. Supports Blender 2.8x and 2.9x.

Chapter One

Getting Started with Rig-GNS

1.1 Exporting Genesis figure from Daz

Load Genesis Figure**:** This can be done from the ***smart content*** pane > ***Figures*** > Double click any Genesis 3 or Genesis 8 base figure.

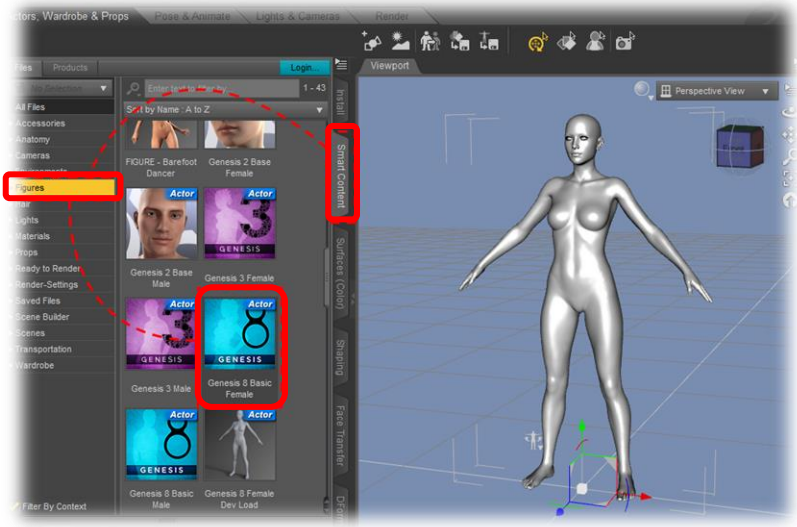


Figure 1.1.1 Load Genesis Base Figure

Adding items: Items such as clothing/hair/accessories can be added to the figure from the **Smart content** pane by checking in their respective tabs Such as Hair, Wardrobe, Props, accessories etc.

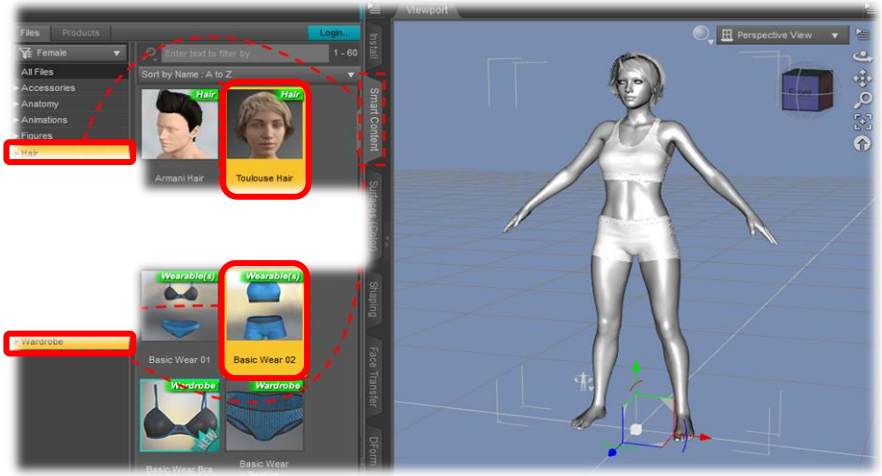


Figure 1.1.2 Add Items to Figure

Reduce Mesh Resolution: To optimize performance, the figure's *resolution level* can be lowered by going to the **Parameters** pane > Expand **Genesis base figure** > **Generals** > **Mesh Resolution,** then

change **resolution level** from high to base. The **Subdivision level** can also be adjusted to Zero. (*see figure 1.1.3 and 1.1.4*)
Repeat the steps for all items that might have been added to the figure such as the wearables and hair. (*see figure 1.1.5)*

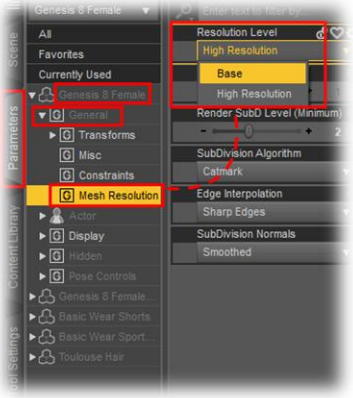


Figure 1.1.3
Reduce resolution level

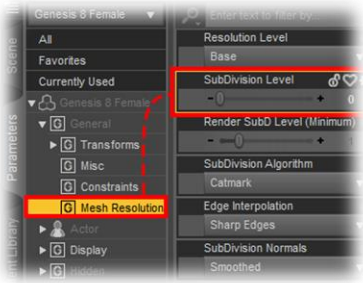


Figure 1.1.4
Lower Subdivision level

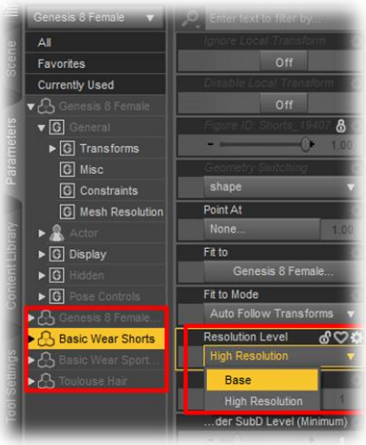


Figure 1.1.5
Repeat steps for all objects

<u>Restore figure pose</u>: To remove any pose that might have been applied to the figure, right click on the **Parameters** Pane > **Restore** > **Restore Figure Pose**. *See Figure 1.1.6*

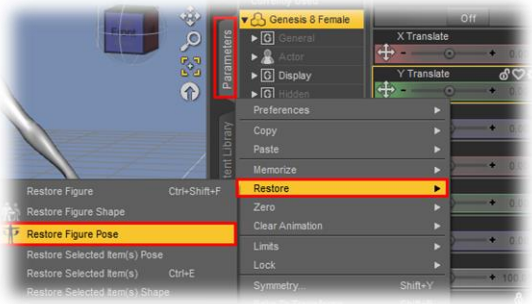


Figure 1.1.6 Restore Figure Pose

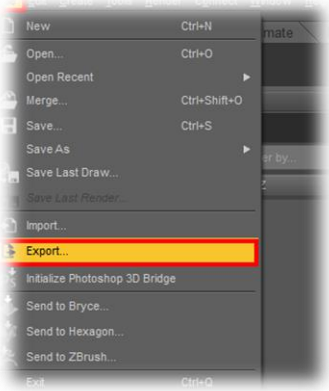


Figure 1.1.7 Export Figure

<u>Export figure as FBX:</u> Go to **file** menu > **Export** (*see figure 1.1.7*). In the pop-up window, save the file with a preferred name and in to a designated folder. Change "Save as type" to Autodesk FBX and select **Save** (*see figure 1.1.8*).

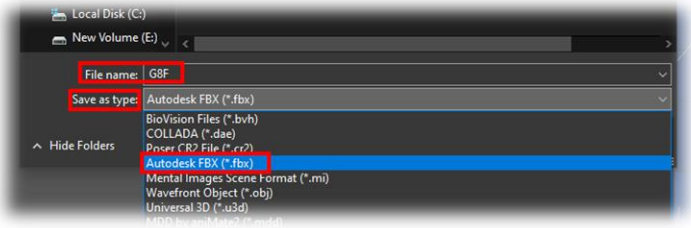


Figure 1.1.8 Saving file

An export window pops open after selecting save. In this window, ensure **Figure** is ticked under the export options. And in the output options, choose **FBX 2014 Binary**, and ensure the following boxes are ticked before selecting the **Accept button** Accept.

- ✓ Collect Textures to Folder.
- ✓ Merge clothing into figure skeleton.
- ✓ Allow degraded skinning.
- ✓ Allow degraded scaling.

(see figure 1.1.9)

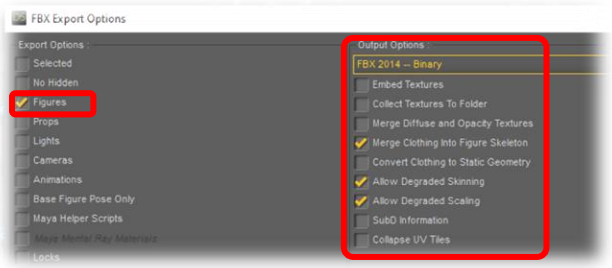


Figure 1.1.9 Checked Boxes

1.2 Importing Genesis Figure in Blender.

Clear Blender Scene: In blender, delete the default cube or any mesh currently in the scene. Press ***"N"*** on the keyboard to bring up the properties panel and select Rig-GNS from the side tabs. With the "*Rig Genesis*" panel expanded in the UI, click the **Import Armature** button Import Armature.

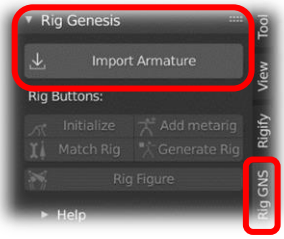


Figure 1.2.1
Rig-GNS in Properties Panel

Figure 1.2.2 Located file

Now locate the file exported from Daz. But while still in the export window, expand **Transform** and untick "**Use pre/post Rotation**". Also expand **Armature** and tick "**Automatic Bone Orientation**". (*See figure 1.2.3*)

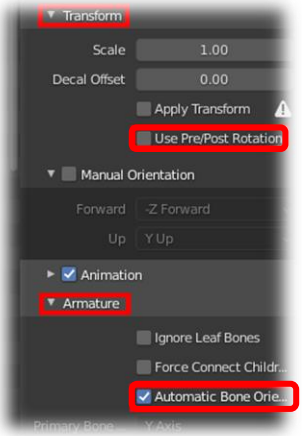


Figure 1.2.3
Import Settings

Go to "Operator preset" and click the **Plus** button + to save your settings. Rename the saved preset and select okay (*see figure 1.2.5 and figure 1.2.6*).

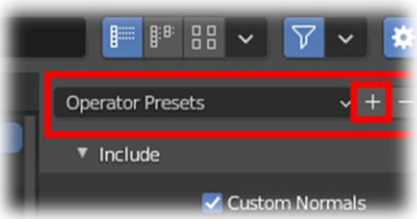


Figure 1.2.5 New Operator Preset

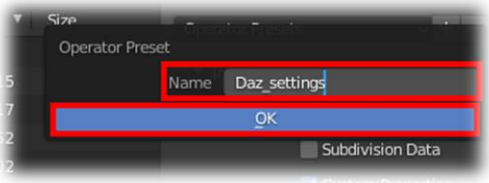


Figure 1.2.6 Rename preset

Now Select **Import FBX** button Import FBX.

1.3 Start rigging process.

When genesis figure is loaded in the viewport, select **Initialize** > **Add metarig** > **Match rig** > **Generate Rig** > **Rig Figure**. When rigging is finished, you can now pose and animate the figure.

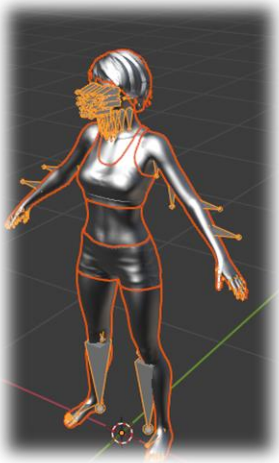


Figure 1.3.1 Imported

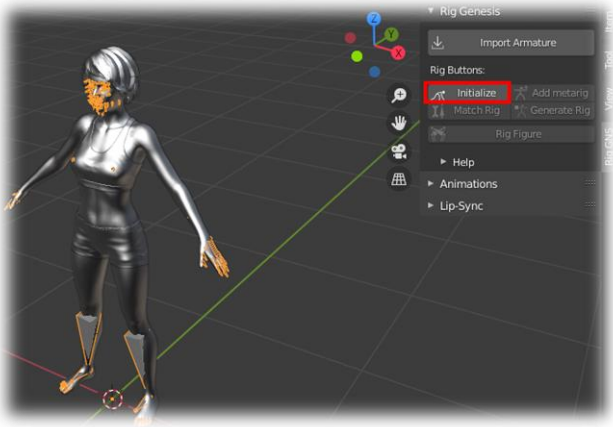


Figure 1.3.2 Initialize Figure

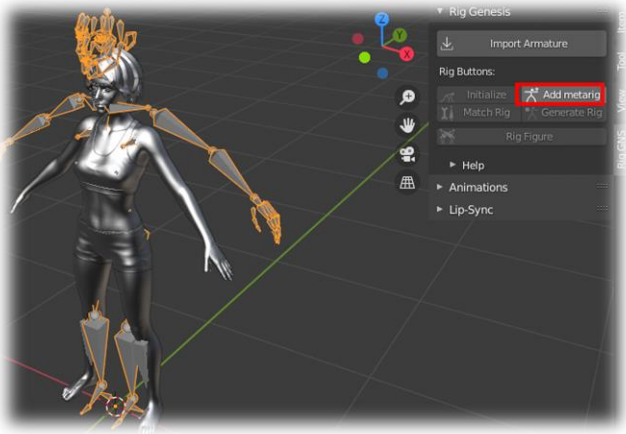


Figure 1.3.3 Add metarig

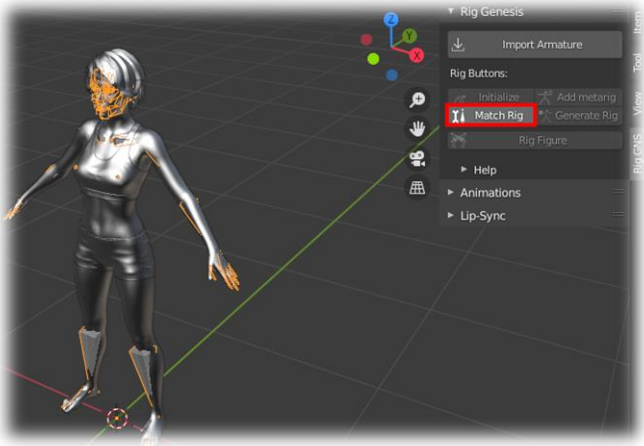


Figure 1.3.4 Match metarig to Figure

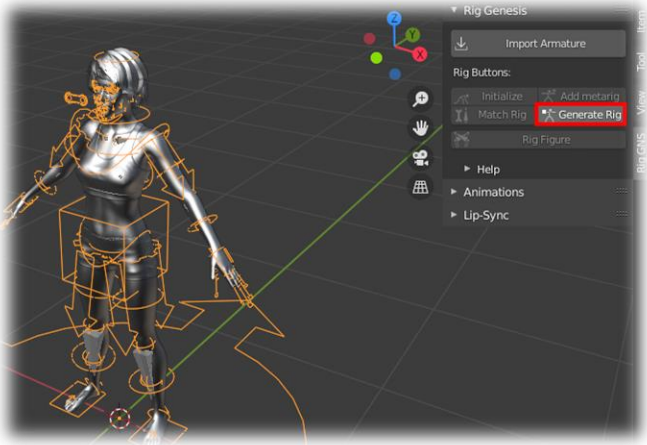


Figure 1.3.5 Generate Rig

Figure 1.3.6 Rig Genesis

Chapter Two

Animation with Rig-GNS.

2.1 Getting Mixamo Animation

After rigging is completed. Expand **Animations** panel and select **Get Mixamo** button to visit https://mixamo.com for animations (*see figure 2.1.1*).

After a successful log-in, search for animation in the search box.

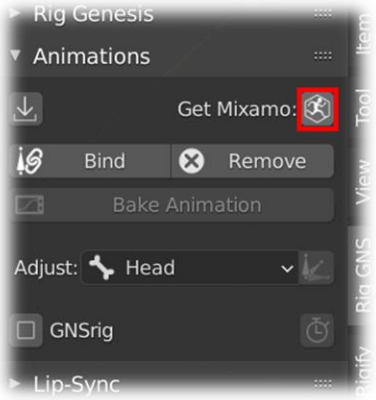


Figure 2.1.1 Get Mixamo

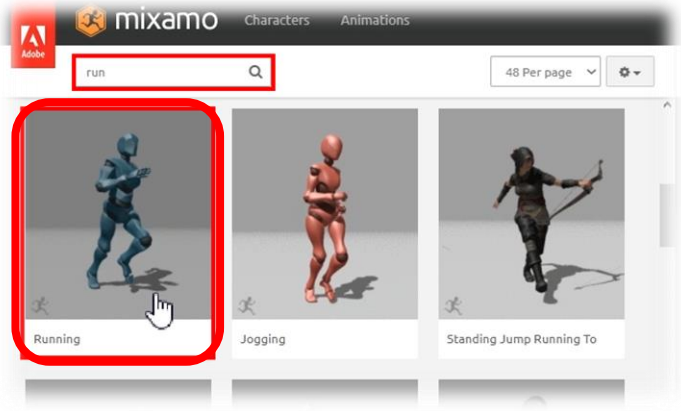


Figure 2.1.2 Search Animation

Select preferred result to have the animation assigned to the preview character i.e., XBOT.

Click **Download**, but while in the download settings, ensure the format is set to ***FBX***. You can also change skin to ***without skin***. (*See figure 2.1.4)*

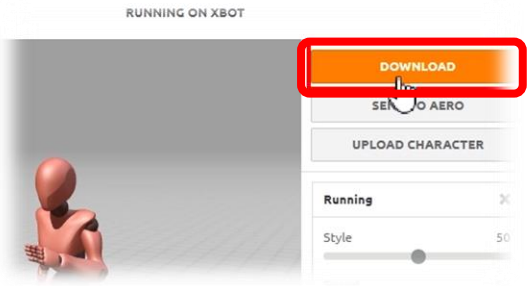


Figure 2.1.3 Downloading

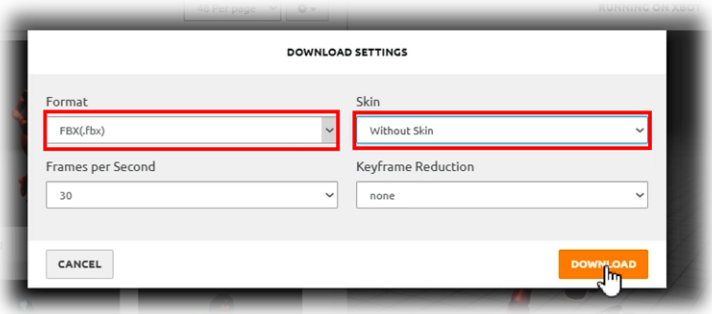


Figure 2.1.4 Download settings

Select **Download** when done.

2.2 Using Mixamo Animation

- With the animation downloaded from Mixamo, click **Import** and locate the downloaded file. Choose the saved **operator preset** with the *Daz settings* before selecting **Import FBX**.

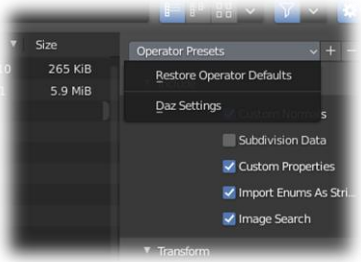
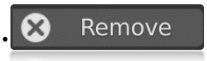


Figure 2.2.1 Saved Operator Preset

- Select **Bind** button to have the figure copy the imported armature, then play the animation for a preview.
- Animated armature can be discarded by clicking the **Remove** button. 
- Animation can be adjusted by going to **adjust** and selecting the body part that needs adjusting (*see figure 2.2.2*). Select body part that needs adjusting > Click and drag the **adjust** button to have the selected bone rotate.

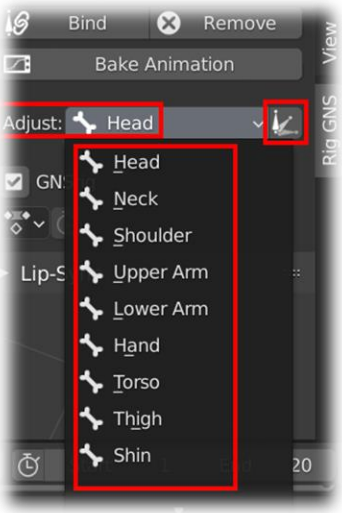
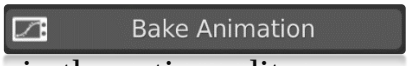
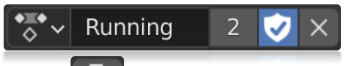


Figure 2.2.2 Bones adjustment

Once satisfied with adjustment, click the **Bake** button  to have animation in the action editor.

- After baking is done, remember to rename the animation (*see figure 2.2.3*).
- All baked animations can be accessed in the action editor. 
- The **clock** button adjusts the frame range to match the length of animation.
- The figure armature can be switched between rig and GNSrig by toggling the GNS rig button (*see figure 2.2.5*).

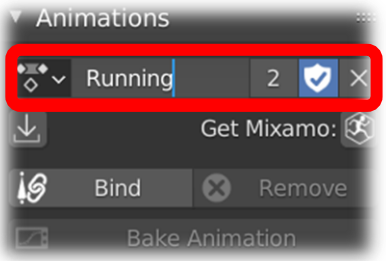


Figure 2.2.3 Renaming action

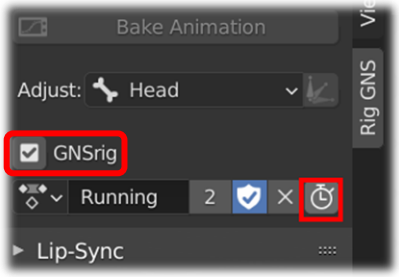


Figure 2.2.5 Renaming action

2.3 Getting Daz Animation

Load a genesis base figure in Daz studio (refer to ***chapter 1.1*** for how). In the smart content pane, check for an animation in the ***Animations*** tab and double click choice to assign animation to the figure.

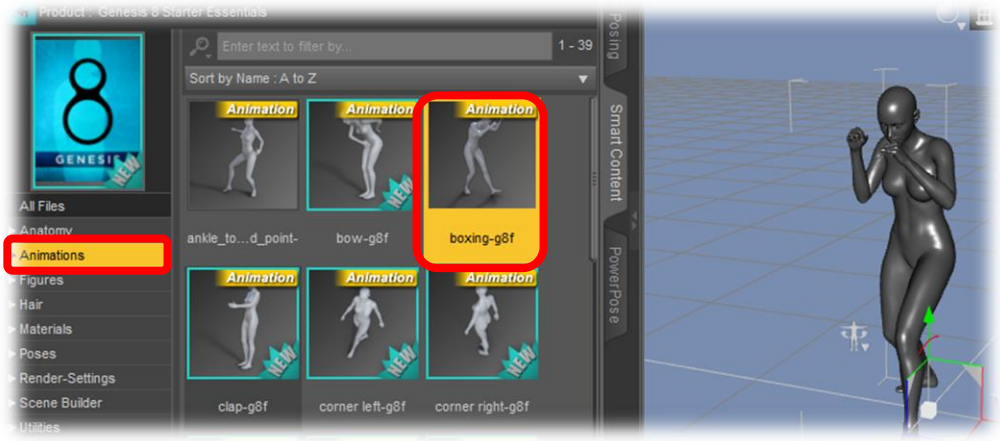


Figure 2.3.2 Assign animation to figure in Animations tab.

Switch the workspace to ***Pose & Animate*** (*see figure 2.3.1).* Otherwise, locate the ***animate Lite*** pane (*see Figure 2.3.3).*

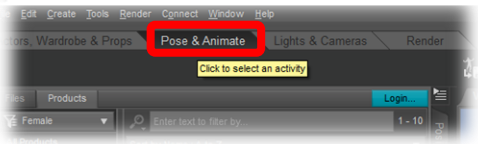


Figure 2.3.1 Pose & Animate

The turquoise bar on the timeline indicates the animation (*see figure 2.3.3*).

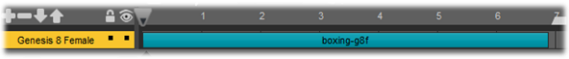


Figure 2.3.3 Animation Bar.

Right click on an empty space along the timeline and select ***Bake To Studio Keyframes*** in the options (*see Figure 2.3.4*).

Figure 2.3.4 Baking Animation

2.4 Using Daz Animation

The green/bluebar below the animation bar indicates the animation has been baked (*see Figure 2.3.5*)

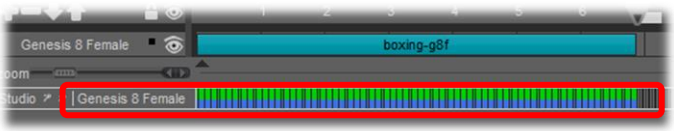


Figure 2.3.5 Baked animation Bar.

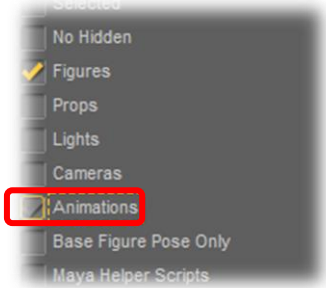
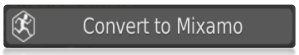


Figure 2.3.6 Export Animation

Now export the figure (refer to ***chapter 1.1*** for how). This time in the export window, ensure ***Animations*** is ticked. (*see Figure 2.3.6*)
In blender, import the file using the same import method as with the Mixamo animation. Once the figure with the animation is imported, click the ***Convert to Mixamo*** button 

that appears in the UI. The button only appears when there's a genesis figure with animation in the scene. (*see Figure 2.3.7*)
After the conversion, now click ***Bind***

and then hit play to see the animation on the figure. The animation can also be adjusted before baking it to the action editor.

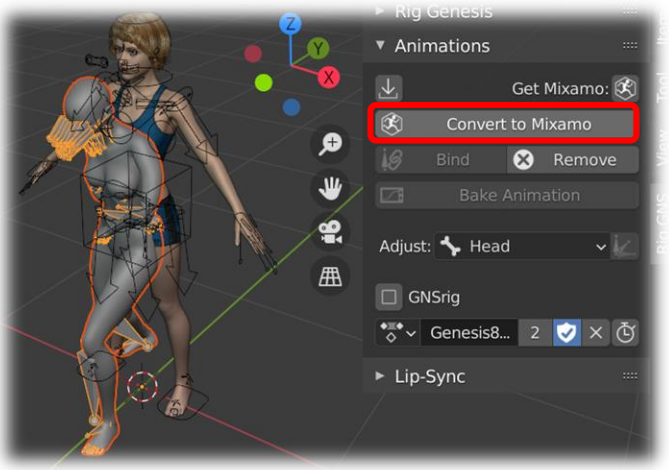


Figure 2.3.7 Imported figure with animation.

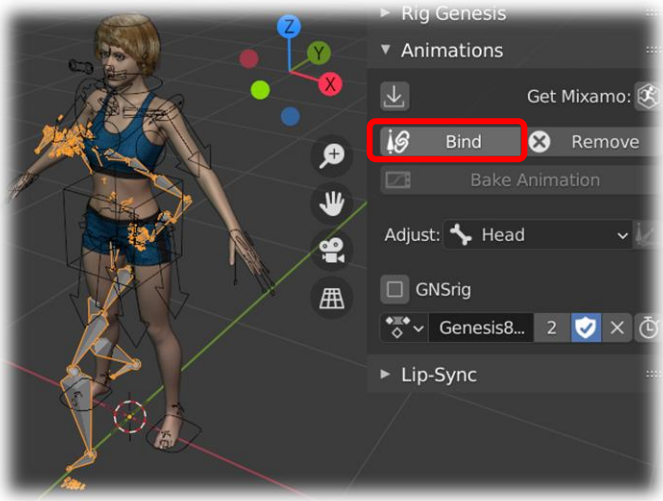


Figure 2.3.8 Converted figure with animation.

Chapter Three
Lip-sync with Rig-GNS

3.1 Creating lip-sync.

To begin the lip-sync, expand the lip-sync panel and make the armature "***rig***" the selected object in the first field (*the first field displays a list of all armatures in the scene*). In the second field *(which is a list of all meshes in the scene)*, ensure the mesh "***genesis8figure.shape***" is the selected object (s*ee figure 3.1.1)*

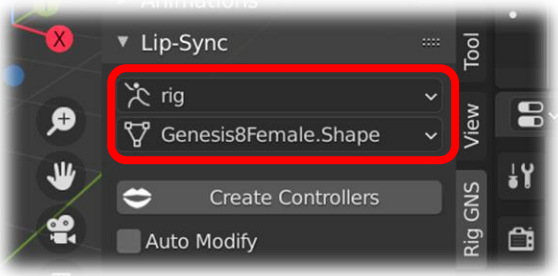


Figure 3.1.1 Armature and Mesh fields.

Now tick the **Auto Modify** checkbox

as this will automatically generate various mouth-shapes on the figure when the create controller button is clicked.

Note that the lip-sync part of the addon can be used with a host of other rigged characters and not just genesis figures. However, the auto modify only works for genesis figures rigged with this addon.

Now click ***create controllers***

to have an array of controllers appear by the head in the form of alphabetic custom-shapes. These controllers control the various mouth-shapes. *(See figure 3.1.2*)

To have the controller influence the figure's mouth, select one and scale it by pressing '**S**' on the keyboard. Dragging the mouse pointer away would have the control-meter swing from min to max, hence influencing the figure.

Figure 3.1.2 Controllers

3.2 Modifying Mouth-shapes

To modify any of the mouth-shapes, select its influencing controller e.g., "**BMP**". Go to ***Controllers settings*** in the addon UI, under **Modify figure**, expand **Select Mode** and choose in what mode to modify the mouth-shape i.e., modify either in **Edit mode**, **Sculpt mode** or **Pose mode** (*see Figure 3.2.1*).

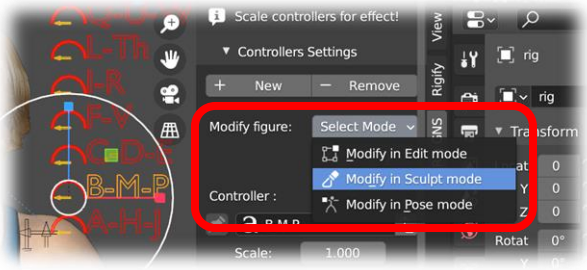


Figure 3.2.1 Modification modes

In Pose mode, move the facial bones to get required shapes while in both Edit mode and Sculpt mode, move vertices to get the required shape.

A notification appears whenever the modification mode is selected (see figure 3.2.2). This informs the user that modification state is active. Click apply Apply *to exit modification state even when no modification was made.*

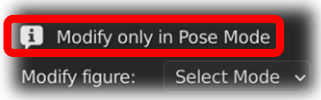


Figure 3.2.2 Notification

After the mouth-shape is modified in any of the three modes (edit, Sculpt or Pose mode), return to addon UI and select apply. Apply
Now scale the controller to see the modified shape by pressing S on the keyboard.

3.3 Adding and removing controllers

To add a new controller, go to the controller settings and click the **New button** + New. A new controller will appear in the viewport with the Label "New" (*see figure 3.31*).

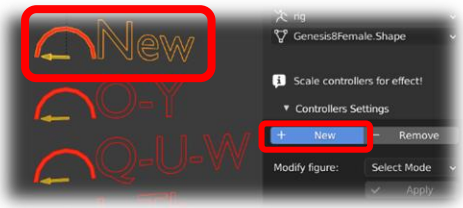


Figure 3.3.1 Adding new controller

Still in the controller settings, where it says ***controller***, click in the name field and rename the

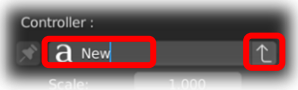
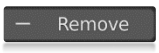


Figure 3.3.2
Renaming Controllers

controller to best describe its function (*see figure 3.3.2*).
After renaming controller, remember to always click the update button in front of the field to have the new name reflect on the added controller.
To assign a mouth-shape or an expression to the new controller, go back to modify figure in the controller settings and follow the steps in section 3.3 (Modifying mouth-shapes).
Any controller can be removed by clicking the **Remove** button 

in the UI.

3.4 Additional Functions

Moving controllers: To move the controllers to a convenient position in the viewport, select the controller and press G on the keyboard to move it. After positioning the controller, click the pin button to have it rest at the new position. This prevent the controller from returning to its previous position when transforms are reset.

Resizing Controllers: To resize the controller, go to scale in the settings. And with the mouse pointer on the values, drag left/right to resize or simply enter a value in the field (*see figure 3.4.1*).

Figure 3.4.1 Adding new controller

Offset Controller: Offsetting the controller moves the name label in respect to the meter. To offset the controller, go to offset in the settings. And with the mouse pointer on the values, drag left/right to move it or simply enter a value in the field (*see figure 3.4.1*).

Figure 3.4.2 Controller offset to right of meter

Appendix

Installing Rig-GNS add-on

In blender and Go to **Edit** menu > **Preferences** *(See figure A1)*. Select **Add-ons** from the preferences options *(See figure A2)*.

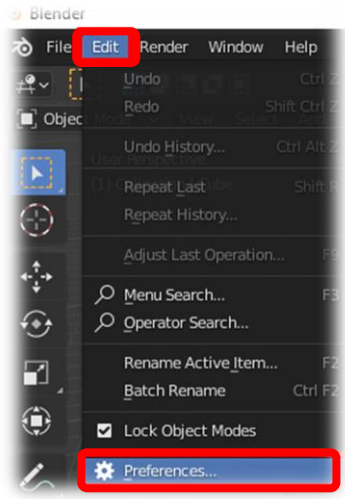


Figure A1
Opening Preferences

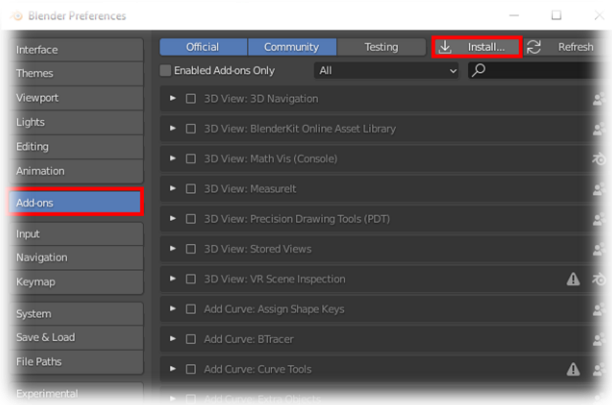


Figure A2 *Installing Add-on*

Select the **Install** button

from the top-menus *(See figure A2)*. Locate and select the downloaded Rig-GNS zip file on your disk drive.

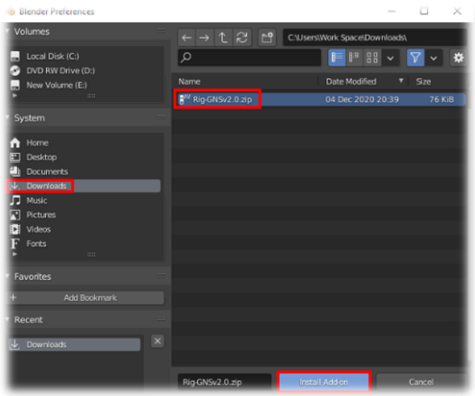
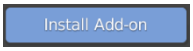


Figure A3 *Locating Zip file*

Click **Install Add-on** button 

. Enable **Rig-GNS** add-on by ticking the box-check *(See figure A4)*.

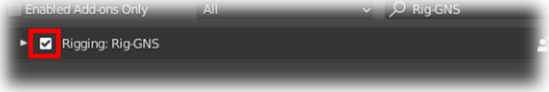


Figure A4 *Enable Add-on*

The rigify add-on also needs to be enabled before Rig-GNS can be used. The rigify add-on comes with blender. To enable the rigify add-on, search for **“rigify”** in the search box and tick its check-box to enable it.

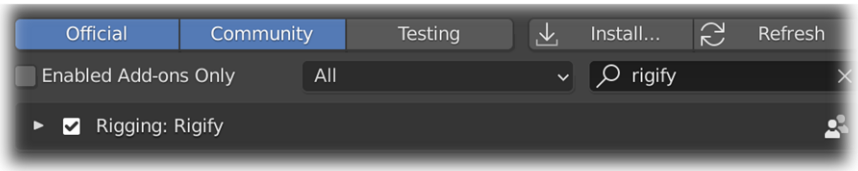


Figure A6 Enable Rigify Add-on